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Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: *Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services To Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems - ET Docket No. 00-258*

*WRITTEN EX PARTE COMMUNICATION*

Dear Ms. Dortch:

In recent meetings with the Commission's staff, representatives of the Wireless Communications Association International, Inc. ("WCA") were asked to consider the suitability of the 3650-3700 MHz band as replacement spectrum for Multipoint Distribution Service ("MDS") channel 1 and 2/2A licensees who are to be relocated from the 2150-2162 MHz band to accommodate the new Advanced Wireless Services ("AWS") at 1710-1755/2110-2155 MHz.[1] Unfortunately, for the reasons discussed below, the 3650-3700 MHz band has a number of major flaws that disqualify it from serving as replacement spectrum for MDS.

To fully understand the problems presented by the 3650-3700 MHz band as relocation spectrum, some background is necessary. Originally, the entire 3600-3700 MHz band had been allocated for use by the Federal Government on a primary basis for radiolocation services.[2] In 1984, a shared primary allocation was added under which downlinks in the non-Government Fixed Satellite Service ("FSS") could be deployed in the band.[3] Pursuant to the Omnibus Budget

[1] *See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, Second Report and Order, 17 FCC Rcd 23193, 23212-13 (2002).

[2] *See Amendment of the Commission's Rules With Regard to the 3650-3700 Transfer Band*, First Report and Order and Second Notice of Proposed Rulemaking, 15 FCC Rcd 20488, 20490 (2000) ("*3650-3700 MHz First R&O and Second NPRM*").

[3] *Id.*

Reconciliation Act of 1993, the National Telecommunications and Information Administration ("NTIA") identified the 3650-3700 MHz band for transfer from the Government/non-Government shared use status to a mixed-use status.[4] In 2000, the Commission implemented that transfer by formally allocating the 3650-3700 MHz band for non-Government fixed and mobile services on a primary basis.[5] In the *3650-3700 MHz First R&O and Second NPRM*, the Commission currently has before it proposed technical, service and auction rules for fixed and mobile use of the spectrum.

In identifying the 3650-3700 MHz band for transfer to mixed-use status, NTIA conditioned the transfer on continued operation of Government radiolocation stations at Pascagoula, MS, Pensacola, FL and Saint Inigoes, MD within an 80 kilometer "radius of operation" of each of those three sites.[6] Thus, in reallocating the 3650-3700 MHz band for fixed and mobile service, the Commission has ordered that terrestrial licensees cannot operate in any of the three facilities' protected 80 kilometer zones without prior frequency coordination, may not cause any interference to the protected Government facilities and must accept any interference from those facilities at all times.[7] The Commission is still considering the specific prior coordination requirements that will be imposed on terrestrial users to assure that they will not interfere with these Government radiolocation stations. Because, however, of the high power levels at which the Government radiolocation stations operate, it is evident however, that if relocated MDS stations must have a secondary status relative to Government radiolocation operations (and WCA can see no way to avoid that here given that NTIA specifically

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[4] *See id.* at 20491, *citing Spectrum Reallocation Final Report*, *Response to Title VI – Omnibus Budget Reconciliation Act of 1993*, NTIA Special Publication 95-312 (rel. Feb. 1995)("*Final NTIA Report*").

[5] *Id.* at 20489-90. It is worth noting that there remains uncertainty surrounding the reallocation of the 3650-3700 MHz band for fixed and mobile services. Indeed, members of the C-Band satellite industry have already requested reconsideration of the Commission's decision to allocate any of the band for fixed service at all, the theory being that the growth and capacity requirements of C-band satellite users far outweigh any demand for use of the 3650-3700 MHz band. *See, e.g.,* Petition for Reconsideration and Comments of the Extended C-Band Ad Hoc Coalition, ET Docket No. 98-237 (filed Dec. 18, 2000). Those requests for reconsideration remain pending. In addition, in its *Notice of Inquiry* in ET Docket No. 02-380, the Commission has requested and received comment on whether it would be feasible to permit unlicensed "underlay" operations in the 3650-3700 MHz, perhaps even at power levels higher than those permitted under Part 15 of the Commission's Rules. *See Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, 17 FCC Rcd 25632 (2002) The predicate for that proposal is limitation of the band is to fixed facilities, since the Commission itself has acknowledged the difficulties associated with permitting underlay operations in bands used for mobile or nomadic devices. *See, e.g., id.* at 25642. Yet, as discussed *infra*, any relocation spectrum for MDS must provide the capability to offer nomadic and mobile data service.

[6] *Final NTIA Report*, at Sections 4-16 to 4-21.

[7] *3650-3700 MHz First R&O and Second NPRM*, 15 FCC Rcd at 20504.

conditioned its release of the spectrum on such secondary status), there will be *de facto* exclusion zones that relocated MDS stations effectively will be unable to serve.

Compounding the problem, when the Commission reallocated the 3650-3700 MHz band it also grandfathered the 82 non-Government FSS downlink earth stations at 49 sites that were already in the band, as well as certain future earth stations.[8] The Commission has ordered that future terrestrial service providers in the 3650-3700 MHz band pre-coordinate their proposed facilities with these grandfathered operations, and, as discussed *infra*, has pending before it specific proposed coordination requirements. While the specific coordination requirements are not yet settled, it is again evident that if relocated MDS stations must protect the grandfathered earth stations, there will be *de facto* geographic exclusion zones surrounding the grandfathered facilities within which no cochannel terrestrial operations will be permitted. Indeed, it was specifically to limit the number of such exclusion zones that the Commission refused to permit additional FSS earth stations to populate the band on a primary basis.[9]

As a practical matter, the exclusion zones that result from the grandfathering of Government radiolocation and non-Government FSS operations preclude relocation of MDS licensees from 2150-2162 MHz to the 3650-3700 MHz band. At the present time, rights to the 2.1 GHz MDS spectrum have been granted across virtually the entire United States, either to incumbent licensees that existed prior to the 1996 MDS Basic Trading Area ("BTA") auction or to the winners of that auction. The only exceptions involve those few geographic areas where both no incumbent licenses had been issued and the BTA auction winner has defaulted. Thus, because there no doubt will be exclusion zones surrounding the Government radiolocation and non-Government FSS grandfathered facilities in which terrestrial service will be precluded, numerous MDS licensees would be unable to operate in the 3650-3700 MHz band throughout their existing authorized service areas.

Moreover, assuming that the rules adopted by the Commission to protect these grandfathered operations would be applied to relocated MDS licensees in the 3650-3700 MHz band, the ability of MDS licensees to provide service even outside of any exclusion zones would be severely compromised. Significantly, the Commission has barred the operation of nomadic or mobile devices in the 3650-3700 MHz band in order to assure protection of grandfathered operations.[10] This limitation on the use of the 3650-3700 MHz band stands in stark contrast to the MDS rules, which allow nomadic devices to operate in the 2150-2162 MHz band, subject to

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[8] *Id.* at 20499-501.

[9] *Id.* at 20497 ("these coordination requirements and the presence of exclusion zones would significantly increase transaction costs and create a disincentive for deployment of new terrestrial operations. Thus, we find that unrestrained deployment of FSS earth stations could hinder or greatly inhibit the opportunities for terrestrial operations in the band.")

[10] *Id.* at 20496.

compliance with certain technical and operational requirements.[11] Indeed, as was made clear in the white paper submitted by WCA, the National ITFS Association and the Catholic Television Network that ultimately led to the adoption of the *Notice of Proposed Rulemaking* in WT Docket No. 03-66, the public is increasingly demanding that wireless data services be mobile or portable, rather than just fixed, and therefore it is essential that the Commission's MDS rules facilitate the provision of such services.[12] Were the Commission to relocate MDS to the 3650-3700 MHz band and retain the ban on mobile or nomadic operations, it would substantially undermine efforts of MDS licensees to successfully deploy wireless data services that address unfulfilled public demand. While undoubtedly there is some demand for a purely fixed MDS data service in some areas of the country, it is the ability of MDS licensees to provide mobile or nomadic data services that will be the key to widespread use of the MDS band.[13]

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[11] *See, e.g. Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems,* Report and Order and Notice of Proposed Rulemaking 16 FCC Rcd 596, 621 (2001)("In its 1998 *Two-Way Order*, the Commission established a regulatory framework under which MDS/ITFS can provide either one-way or two-way service to fixed or portable locations.").

[12] *See* "A Proposal for Revising the MDS and ITFS Regulatory Regime," RM-10586, at 5-9 (filed Oct. 7, 2002)("WCA-NIA-CTN Proposal"); *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, 18 FCC Rcd 6722, 6737-8, 6818 (2003).

[13] Even were the Commission to alter the allocation to permit the use of the 3650-3700 MHz band by nomadic and portable consumer devices, some have suggested that the band is not large enough to accommodate demand. Motorola, for example, has stated that "[w]hile the 3650-3700 MHz band is a good start,… a total of 50 MHz may provide insufficient capacity to provide robust competition to wired services, particularly if the FCC envisions multiple licensees within the same area." Comments of Motorola, ET Docket No. 98-237, at 2 (filed Feb. 16, 1999). Lucent was equally skeptical:

> Although TDD fixed wireless technology may be deployed in the 3650-3700 MHz band, this band is too narrow for service providers to implement systems, using DECT specifications, that are capable of providing high-speed two-way services . . . . If the Commission licenses two operators in the band, each TDD system using DECT specifications should be able to provide 120 channels for voice telephony and data transmission at rates up to 64 kpbs. If the Commission licenses only one operator in the band, TDD systems may be able to provide higher data rates, i.e. up to ISDN. However, because of the limited amount of spectrum, TDD systems operating in this band must constantly balance, in a flexible way, higher data rates against the number of subscribers served. Thus, as demand for data rates beyond 64 kbps increases at a given point in time in a given location, a particular base station's capacity to handle simultaneous users may decrease, i.e. it may not be able to accommodate 120 simultaneous voice channels. Therefore, . . ., fixed wireless systems using DECT specifications will not be capable, if the dimension of the cells remains unchanged, of providing high-speed data services to large numbers of simultaneous users.

Equally problematic would be any imposition on relocated MDS licensees of the prior coordination requirement that has been adopted to protect grandfathered operations in the 3650-3700 MHz band from terrestrial interference.[14] Although the specifics of that prior coordination requirement are still to be determined, the proposal advanced by the Commission in the *3650-3700 MHz First R&O and Second NPRM* illustrates how burdensome that requirement is likely to be. The Commission has tentatively concluded that each FSS earth station should have a coordination zone of 200 kilometers (125 miles) within which terrestrial service providers would have to coordinate with FSS incumbents to avoid harmful interference.[15] The Commission's map of these FSS earth stations and their coordination zones (attached hereto as Exhibit 1) reflects that under this proposal MDS licensees would be required to coordinate with FSS incumbents in areas covering virtually all of the Northeast and Mid-Atlantic region, substantial portions of Kentucky, Tennessee, North Carolina, Georgia, Alabama, Florida, Washington and Oregon, and virtually all of the state of California.[16] The Commission has proposed to require terrestrial service operations located within a grandfathered FSS earth station's coordination zone to identify any potential interference prior to construction via the technical information contained in Appendix S7 of the ITU Radio Regulations.[17] If the terrestrial operator believes

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Comments of Lucent Technologies, ET Docket No. 98-237, at 3-4 (filed Feb. 16, 1999). Not surprisingly, there appears to be little in the way of equipment capable of meeting the needs of MDS licensees relocated to the 3650-3700 MHz band, and that situation is not likely to change any time soon. According to Motorola:

> [T]he utility of the 3650-3700 MHz [band] will be affected by its incompatibility with international allocation efforts for [Wireless Local Loop] . . . . Manufacturers hoping to serve the US market, therefore, may not be able to take advantage of product development for the global markets. Lacking such manufacturing economies, US equipment will cost more to produce. It is unclear to Motorola that the US market will be able to overcome the obstacles and provide the necessary incentives for manufacturers to design specialized equipment for this small slice of spectrum in a single market.

Motorola Comments at 2.

[14] *See 3650-3700 MHz First R&O and Second NPRM*, 15 FCC Rcd at 20529-31.

[15] *Id.* at 20501. Subsequent facilities, excluding certain minor modifications, must operate on a secondary basis.

[16] The map, which is taken from the *3650-3700 MHz First R&O and Second NPRM*, Appendix G, also reflects that terrestrial wireless operators must protect grandfathered non-Government Telemetry, Tracking, and Control (TT&C) facilities located at Three Peaks, CA; Hawley, PA; and Cheyenne, WY. *Id.* at 20502. Those facilities are entitled to the same protections as the other grandfathered FSS earth stations, except that they will be protected only for the frequencies they are authorized to use for TT&C operations. *Id.*

[17] *Id.* at 20530. The Commission's proposal is unclear as to how the matter is to be resolved if the parties cannot agree that no interference will exist.

that it will not cause interference, then it must forward its technical study to the affected FSS earth station licensee, who then would have 30 days to respond. With respect to coordination with Government radiolocation services, the Commission has proposed to require the terrestrial service provider to provide essentially the same data that would be required under a site license regulatory regime, and to refrain from operating until the Commission notifies it that the Government does not object.

Regardless of what coordination procedures the Commission ultimately adopts, forcing MDS channel 1 and 2/2A licensees to shoulder the additional burden of prior coordination of their facilities with FSS and Government radiolocation incumbents over such large regions of the country will impose unnecessary economic costs and delay MDS broadband deployments even outside of any *de facto* exclusion zones. Again, the WCA-NIA-CTN Proposal made clear that wireless data services will not be viable if the deployment of facilities is delayed and made more expensive by burdensome regulatory requirements.[18] Thus, the proposal calls for the adoption of a PCS-like regulatory regime for a large portion of the MDS/ITFS band that would permit licensees to construct new and modify existing facilities without delay or regulatory costs.[19] Imposing a prior coordination process on MDS licensees relocated to the 3650-3700 MHz band simply cannot be squared with the demands of the marketplace.

Moreover, substantial questions remain as to whether relocated MDS licensees in the 3650-3700 MHz band can co-exist with the megawatt Federal Government mobile radar systems that continue to operate in the adjacent 3300-3650 MHz band.[20] Relocated MDS operators would be required to accept any interference received from adjacent band Federal Government mobile radar systems, thus raising substantial uncertainty as to exactly how much of and where the 3650-3700 MHz band would be usable for terrestrial service. Although the Commission has suggested that equipment manufacturers will be able to protect terrestrial operations in the 3650-3700 MHz band from adjacent channel interference,[21] the record is devoid of any evidence that such protection is possible. Indeed, preliminary evidence indicates that mitigation of such interference is likely to be extremely difficult. In its 1999 Report on the technical characteristics of Federal Government mobile radar facilities in the 3.1-3.7 GHz band (a report which the Commission has recommended that terrestrial providers and their equipment suppliers consult before considering operations in the 3650-3700 MHz band), NTIA assumed that the Government radar facilities may interact with adjacent channel facilities at distances up to 150 kilometers. When one considers that Government radar facilities in the 3300-3365 MHz band may operate

[18] *See* WCA-NIA-CTN Proposal at 7-10.

[19] *Id.* at 10-11.

[20] *3650-3700 MHz First R&O and Second NPRM*, 15 FCC Rcd at 20533.

[21] *See* NTIA Report TR-99-361, "Technical Characteristics of Radiolocation Systems Operating in the 3.1-3.7 GHz Band And Procedures For Assessing EMC With Fixed Earth Station Receivers," at 2-3 (Dec. 1999).

on land, at sea or in the air, it becomes clear that potential interference from those facilities is a nationwide problem that will be very difficult (and expensive) to resolve.[22] Unless the Commission can be certain that relocated MDS operations can be protected, and is prepared to impose the costs of that protection on the AWS auction winners that benefit from the relocation of MDS, it cannot seriously consider the 3650-3700 MHz band as replacement spectrum for MDS.

Along similar lines, there is no evidence in the record which suggests that were MDS relocated to 3650-3700 MHz, it could coexist with the fixed service and FSS facilities in the 3700-4200 MHz band. Certainly, before the Commission can relocate MDS to 3650-3700 MHz, it must make certain that MDS will not suffer harmful interference. Moreover, the Commission will have to ensure that MDS will not have to accept onerous limitations to protect operations above 3700 MHz from interference.

Finally, it must be remembered that the Commission has already acknowledged that the propagation characteristics in the 3650-3700 MHz band are inferior to those in the 2.1 GHz range.[23] Thus, just as the Commission did when it quadrupled the amount of spectrum assigned each Digital Electronic Message ("DEMS") licensee when it relocated that service from the 18 GHz band to the 24 GHz band,[24] any relocation of MDS would have to provide licensees with additional spectrum and assure that compensation is provided for the increased costs licensees will incur when operating in spectrum with inferior propagation characteristics.

The Commission cannot make a silk purse out of a sow's ear – the 3650-3700 MHz band plainly is not suitable replacement spectrum for MDS. The MDS industry's willingness to cooperate with the Commission in the relocation process is well-documented, but that cooperation does not include accepting relocation to spectrum in which MDS licensees will be unable to provide a viable mobile and nomadic data service due to interference protection requirements, exclusion zones and interference from others. The Commission must continue its

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[22] *See id.* at 2-8.

[23] *See 3650-3700 MHz First R&O and Second NPRM* ,15 FCC Rcd at 20498 ("Because this 50 megahertz is at a higher frequency than 15 megahertz of spectrum identified [for competitive bidding] in the 1990-2110 MHz band, additional bandwidth is required to compensate for increased path losses that occur in the 3650-3700 MHz band.").

[24] *See Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service from the 18 GHz Band to the 24 GHz Band and To Allocate the 24 GHz Band For Fixed Service*, 12 FCC Rcd 3471, 3475 (1997).

efforts to locate suitable replacement spectrum for MDS, so that the MDS industry's prolonged uncertainty about the status of MDS channels 1 and 2/2A can be resolved once and for all.

Respectfully submitted,

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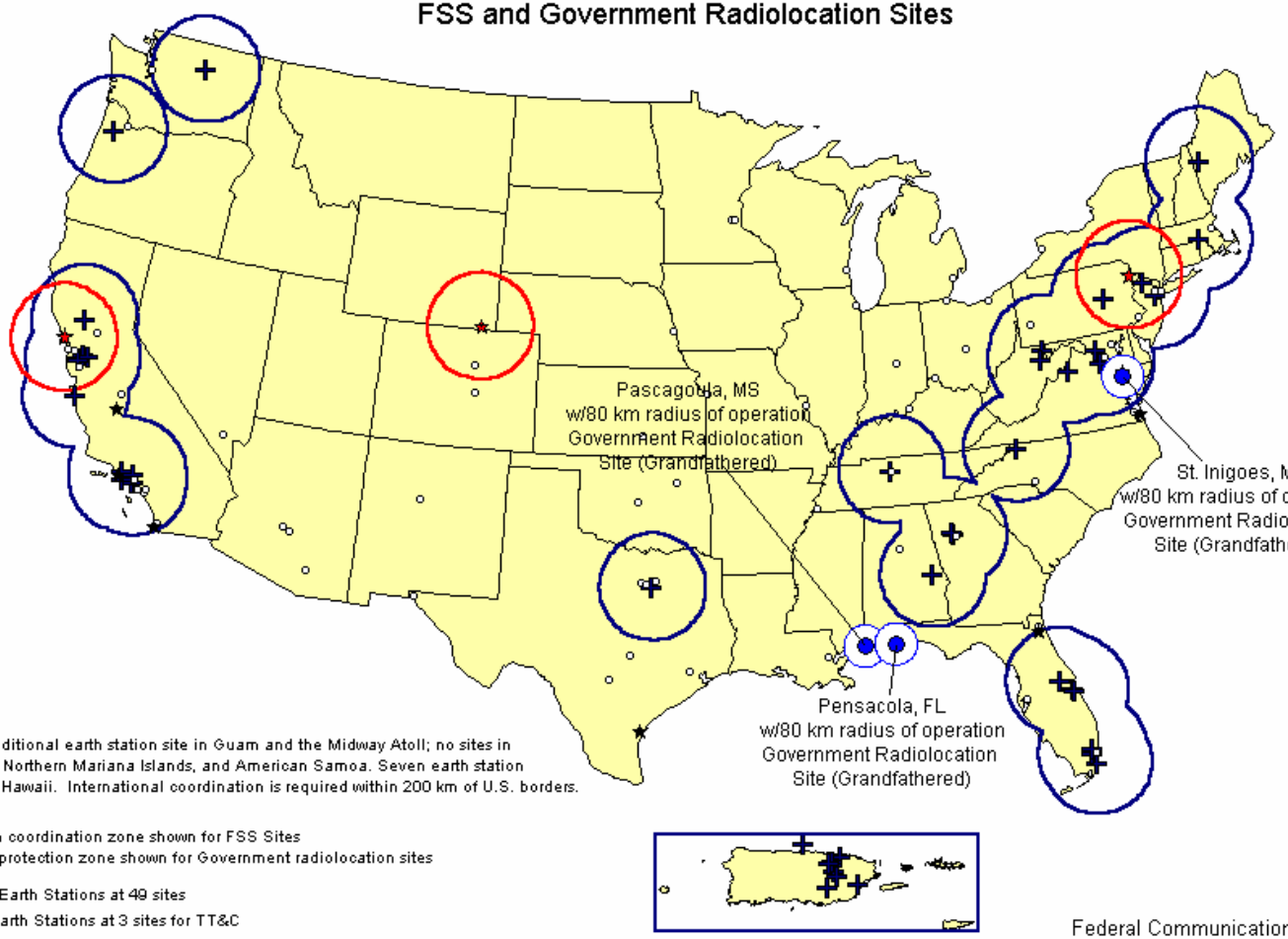
# EXHIBIT 1

**Appendix G**

# Grandfathered Operations in the 3650-3700 MHz Band

## FSS and Government Radiolocation Sites




Notes:

One additional earth station site in Guam and the Midway Atoll; no sites in Alaska, Northern Mariana Islands, and American Samoa. Seven earth station sites in Hawaii. International coordination is required within 200 km of U.S. borders.

200 km coordination zone shown for FSS Sites
80 km protection zone shown for Government radiolocation sites

- 82 Earth Stations at 49 sites
- 4 Earth Stations at 3 sites for TT&C
- Cities with a population of more than 250,000

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10/12/00